

PROTECTING TODDLERS FROM TOOTH DECAY

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LEARNING POINTS

- 1 The first teeth usually start to erupt at around six months and are all through by three years.
- 2 Dental caries (tooth decay) is a softening of the enamel which leads to holes in the teeth.
- 3 Tooth decay causes discomfort and distress to toddlers.
- 4 There are many causes and risks for developing tooth decay, and prevention is better than treatment.
- 5 Diet plays an important part in preventing tooth decay, especially the limiting of sugary food and drinks to four times a day, at meals and one snack.
- 6 Water and milk are the only drinks that should be offered between meals and snacks.
- 7 Undiluted fruit juices cause erosion of the dental enamel and they should always be diluted before drinking.
- 8 All drinks should be taken from a cup or glass, not a bottle.
- 9 Tooth brushing should begin once the child's first teeth have erupted.
- 10 Toothpaste should always contain fluoride, even if the drinking water is fluoridated.
- 11 An easy way to brush a toddler's teeth is from behind. Toddlers should not run around with a toothbrush in the mouth in case they fall and suffer an injury.
- 12 If children require medicines they should be sugar-free, and if none is available they should, if possible, be taken at mealtimes and not last thing at night.

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WHY THE FIRST TEETH ARE IMPORTANT

Infancy and the toddler years are a time when the teeth come through and the child acquires his or her first 'milk' dentition. The process usually starts at around six months and is complete by three years. The eruption of the first teeth can sometimes cause mild discomfort and fever.¹

The first teeth are important developmentally, for a child's speech, eating and facial appearance. They establish a space in the mouth for adult teeth, allowing the permanent teeth to grow and develop normally. Early loss of the first teeth can lead to overcrowding when adult teeth appear. This may lead to the child needing orthodontic treatment (braces) in later years.

WHAT IS DENTAL CARIES?

Dental caries, also known as tooth decay, is a disease where acids formed by bacteria in dental plaque damage the hard tooth structure. This is a destructive process that leads to decalcification (softening) of the tooth enamel and dentine with progressive damage and ultimately to a cavity (hole) in the tooth.

Dental caries can cause toothache, distress and discomfort to toddlers, stop them sleeping and eating, and lead to reduced food intake, behavioural disturbances and parental concerns about appearance.²



THE FIRST TEETH ARE AS IMPORTANT AS ADULT TEETH

The first teeth are just as prone to dental caries as permanent teeth. It is important to take special care of a child's mouth in order to prevent dental decay and to avoid dental extractions and fillings.



PREVALENCE OF DENTAL CARIES IN PRE-SCHOOL CHILDREN

By the time they are five years old, over 30 per cent of children in the UK have dental decay.³ In fewer than 10 per cent has the decay been treated and the tooth restored.⁴ When many teeth are decayed they may be extracted under local or general anaesthetic.

In some parts of the UK dental caries is particularly common. In Scotland, for instance, 14 per cent of children have had a tooth extracted by the age of five⁵ and dental surgery is the commonest reason for general anaesthesia.⁶

CAUSES AND RISK FACTORS FOR DENTAL CARIES

There are many risk factors for developing dental caries including excess and frequent dietary sugar intake, low socioeconomic status, poor parental education and low levels of fluoride in the drinking water.^{7,8}

There are SIX ways to prevent dental decay:

1. Remove Dental Plaque. Plaque is the collection of microorganisms (bacteria) and other material around the teeth. Plaque can be removed by efficient tooth brushing.



2. Strengthen the Enamel. The enamel that coats the teeth becomes softened. It can be protected by regular tooth brushing and strengthened by using fluoride toothpaste.

3. Limit Sugar Intake. The sugars in sweet foods and sugary drinks are metabolised to acids by the bacteria in dental plaque. These acids cause demineralisation or softening of the enamel. This process can be prevented by reducing the frequency of sugar intake to a maximum of four times a day.⁹

4. Avoid Food and Sweet Drinks at Night. Saliva in the mouth helps protect against tooth decay. During sleep salivary flow and swallowing decline, making clearance of material in the mouth less frequent. Food and drinks other than water should not be given to toddlers if they wake during the night.



5. Avoid Prolonged Bottle-Feeding. Offer all drinks from cups not bottles. Prolonged bottle-feeding with sugary drinks or milk, particularly when a toddler is allowed to fall asleep with a bottle in his or her mouth, can contribute to dental decay and should be strongly discouraged.



6. Avoid Grazing on Food and Drink. Frequent eating and drinking is associated with a build-up of plaque on toddler's teeth.¹⁰ Food and drinks other than water should be restricted to three meals and two to three healthy snacks each day. Grazing on food and drinks should be strongly discouraged.

TREATMENT

Treatment of dental decay in toddlers is difficult because of their limited understanding and attention span. It is far easier to prevent decay than to treat it.

PREVENTION

NUTRITION AND DIET

Foods

Toddlers have small appetites and each day they need three regular meals with two to three planned snacks in between. These meals and snacks should be nutritious and parents should be advised to encourage the consumption of nutritious savoury snacks. Foods with added sugars should be eaten no more than four times per day e.g. at the three meal times and one snack. [see Factsheet 1.1](#) Parents should encourage savoury tastes.¹¹

'Added sugars'

Parents should check the ingredients list on food labels and be aware of foods that contain 'hidden' sugars. [see Factsheet 1.9i](#)

Added sugars include: honey; sucrose; glucose; maltose; dextrose; fructose; hydrolysed starch; corn or maize syrup; molasses; raw / brown sugar; treacle and concentrated fruit juice.

Suggestions for nutritious snacks¹² [see Factsheet 1.9](#)

Fruit	mouth-sized chunks, cubes or slices of apple, pear, satsuma, orange, banana, kiwi, melon, strawberries, sliced grapes, peaches and plums
Raw vegetable sticks or slices	carrot, pepper, celery, cucumber, sliced cherry tomato, radish, broccoli
Toast, breads, rolls, baps, bread sticks, plain buns	French bread with a small amount of butter or spread; mini savoury sandwiches with marmite, cheese, tuna, banana, salad or thin slices of meat; pita bread pockets cut into small slices or toasted with or without butter or spread e.g. olive or sunflower oil spread; breadsticks on their own or with a dip or soft cheese
Oatcakes, rice cakes, crackers, crisp breads, melba toast	plain or with butter or spread e.g. olive oil or sunflower oil spread, or use a savoury spread, such as marmite or peanut butter
Natural yogurt or fromage frais	on its own or as a dip or with fruit
Muffins, plain, potato or cheese scones, crumpets, pancakes, plain popcorn	on their own or with a small amount of butter or spread
Wholegrain breakfast cereals, but not cereal bars	serve with milk and fresh fruit

Note: Three or four crisps or corn snacks (e.g. Quavers, Golden Lights, Wheat Crunchies, tortilla chips or Twiglets) can be offered as part of a snack or meal option as an alternative texture and taste (e.g. with a salad dish). However, they are high in salt and fat and therefore pre-school children should not be given these often or in large amounts.

Drinks

Toddlers should be offered six to eight drinks per day in a cup or glass, not from a bottle. [see Factsheet 1.1](#) Lidded cups should have a free-flow spout, not a valved one. Toddlers should sip, not suck drinks from as early an age as possible.¹¹

Baby juices and drinks constituted from fruit concentrates should be avoided unless they are well diluted and included on one of the four daily occasions when sweet food and drinks are offered. Drinks which are labelled as containing added substances ending in 'ose' (e.g. sucrose) are potentially damaging to teeth.

There is no evidence that milk taken as part of a normal diet is harmful, but there is some evidence that prolonged or frequent exposure to milk at night can still cause tooth decay in toddlers. From the age of about 12 months only water should be offered during the night if the child awakens.⁴

Suggestions for drinks¹²

Children should be encouraged to drink plain, still water throughout the day rather than only sweet drinks. Water, like other drinks, quenches thirst and replenishes body fluid, but water does not spoil the appetite and is not harmful to teeth. It also helps to prevent constipation.

Milk and water should be the only drinks taken between meals. Breastfeeding may well be continued into the second year or longer. Cows' milk can be the main drink from one year old and whole milk should be given until the child is at least two years old. A follow-on formula or growing up milk can be considered for toddlers who are nutritionally vulnerable and do not eat well. From the age of two, semi-skimmed milk can be introduced as a main milk drink, provided the child is eating well. Fully skimmed milk is low in vitamin A and for this reason is not suitable as a drink for children under the age of five years. From five years of age fully skimmed milk can be given if excess weight gain is of concern. When only one type of milk is provided (e.g. in the nursery setting) it should be whole cows' milk because it contains more vitamin A than skimmed milks.

Fruit juices are a good source of vitamin C and are best given with breakfast or a main meal because they help with the absorption of iron. However, all fruit juices are acidic and can cause dental caries and therefore should always be served diluted in a cup, never a bottle, and at meal or snack times only. These should be diluted one part juice to ten parts water.

Other sweet drinks are unsuitable for toddlers and pre-school children: they contribute to dental caries, they are a poor source of essential nutrients, they tend to displace other more nutritious foods, and they can lead to overweight and obesity. [see Factsheet 3.3](#) Unsuitable drinks include fizzy (carbonated) drinks, still sugary drinks, squashes and flavoured waters, cartons of sugared drinks and cordials for milk drinks. Fizzy, carbonated drinks which are sugar-free are also harmful to teeth owing to their high acid content.



Tea and coffee are not recommended for children under five years because they contain tannin and caffeine. Tannin interferes with the absorption of iron and caffeine is a stimulant. [see Factsheet 4.4](#)

PROTECTING THE TEETH

TOOTH BRUSHING

Parents should be advised to start tooth brushing as soon as their child's first teeth erupt. They should use a small (child-size) toothbrush with soft bristles. Toothbrushes should be replaced every three months or sooner if the bristles splay. A child should go to bed having just had his or her teeth brushed. No drinks or food should be given after brushing.

Tooth brushing should be part of the daily routine to establish a healthy future lifestyle. Teeth should be brushed twice daily – in the morning and last thing at night. Fluoride toothpaste should be put onto a dry brush:

- **up to the age of three:** a smear of toothpaste containing 1000ppm of fluoride
- **over the age of three:** a pea sized amount of toothpaste containing 1350-1500ppm or fluoride¹³

A dry brush is more efficient than a wet one, as the bristles are harder and there is less chance of bacteria accumulating.

One of the easiest ways to brush a toddler's teeth is from behind.

Comfortable and safe positions for the child are on the parents' knee, sitting on a changing mat, in a baby chair / high chair or sitting in a pram or buggy.¹⁴ Children should not be allowed to run around with a toothbrush in the mouth because of the risk of injury if they fall.



As more teeth come through it is important to develop a system of cleaning them that ensures all surfaces are brushed thoroughly. Children should be supervised until at least seven years and always told to 'spit don't rinse' and not to swallow the toothpaste. Excessive rinsing removes the benefit of fluoride.

All children should be registered with a dentist from the moment their teeth erupt.

ARE SUPPLEMENTS NECESSARY TO PROTECT TEETH?

Fluoride, vitamin D and calcium are key nutrients in protecting the teeth. **Fluoride** strengthens dental enamel and makes it resistant to attack by the acid produced by plaque bacteria. In some areas of the UK fluoride is added to tap water, while in others tap water naturally contains adequate amounts of fluoride.¹⁵

In parts of the UK where fluoride levels are low in tap water dentists may recommend fluoride varnishes, drops or tablets. To check the geographical distribution of fluoridation visit: www.defra.gov.uk/evidence/statistics/environment/inlwater/iwfluoride.htm

Some toddlers have low **vitamin D** levels and a supplement of vitamins A and D is recommended for all toddlers.¹⁶ [see Factsheet 4.4](#)



Toddlers who have a balanced diet, including three servings of milk, cheese and yogurt each day will get adequate amounts of **calcium**. Toddlers with an allergy to milk proteins will need their diet assessed by a dietitian and may need a calcium supplement.

FAMILY ORAL HYGIENE

Two bacteria have been implicated in the development of dental caries – *Streptococcus mutans* and *Lactobacillus*. These microorganisms colonise the mouth soon after the teeth erupt and are usually transmitted to the infant by parents or carers sucking teats, soothers or spoons. If the parents and carers have active untreated caries with high levels of *Streptococcus mutans* then the child is more likely to develop dental caries at an earlier age. Parents and carers should have their tooth decay and gum disease treated and should brush their teeth twice daily.¹³



SUGAR-FREE MEDICINES

When children are dispensed medicines they should be sugar-free (SF). If no sugar-free medicines are available then the medicine should, if possible, be given at meal times. Medicines containing sugar should not be given to a child last thing at night if possible.



SOOTHERS, PACIFIERS, DUMMIES

If the toddler uses these the parents should be advised to:

- use an orthodontic soother / pacifier / dummy
- never dip it in anything sweet, for example, jam or honey.



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PROTECTING TODDLERS FROM TOOTH DECAY GUIDANCE & TIPS FOR PARENTS



You can protect your toddler's teeth and prevent tooth decay by regular brushing with a fluoride toothpaste, and sensible eating and drinking habits.

Regular effective tooth brushing to remove plaque

Start brushing your toddler's teeth as soon as they erupt and register him or her with a dentist.

An easy way to brush your child's teeth is from behind. Comfortable and safe positions for your toddler can be on your knee, sitting on a changing mat, in a high chair or in a pram or buggy.

As more teeth come through, develop a system of cleaning them that ensures all surfaces are brushed thoroughly twice each day.

Toddlers should be encouraged to enjoy brushing their own teeth, but children should be supervised until at least seven years and always taught to 'spit don't rinse', because excessive rinsing removes the benefit of fluoride.

Fluoride toothpaste to strengthen tooth enamel

Brush teeth, twice a day with a small soft dry brush using a toothpaste containing fluoride

- **up to the age of three** use a smear of toothpaste containing 1000ppm of fluoride
- **over the age of three** use a pea sized amount of toothpaste containing 1350-1500ppm of fluoride

Take care with sweet food and drinks

Always dilute fruit juices because they are both sweet and acidic and can damage teeth. Serve them in a cup, never in a bottle.

Never leave a bottle of milk or a sweet drink with your toddler when you put him or her down to sleep.

Begin using a cup or free-flow beaker for drinks from about six months or so, and stop using bottles around 12 months. Never give sweet drinks in a bottle because sucking slowly on sweet drinks increases the risk of tooth decay.

Water or milk are safe drinks between meals and snacks. Give only water at night to toddlers.

Limit foods and drinks containing sugar to four times a day, e.g. at the three meals and one snack. The other snacks should be savoury snacks with no sweet food or drinks.

Do not allow grazing on food and drinks throughout the day. Only offer your toddler food at three meals and two to three snacks each day.

If your child uses a pacifier, soother or dummy make sure it is an orthodontic dummy and never dip it in anything sweet.

Nutritious snacks

Fruit	mouth-sized chunks, cubes or slices of apple, pear, satsuma, orange, banana, kiwi, melon, strawberries, sliced grapes, peaches and plums
Raw vegetable sticks or slices	carrot, pepper, celery, cucumber, sliced cherry tomato, radish, broccoli
Toast, breads, rolls, baps, bread sticks, plain buns	French bread with a small amount of butter or spread; mini savoury sandwiches with marmite, cheese, tuna, banana, salad or thin slices of meat; pita bread pockets cut into small slices or toasted with or without butter or spread e.g. olive or sunflower oil spread; breadsticks on their own or with a dip or soft cheese
Oatcakes, rice cakes, crackers, crispbreads, melba toast	plain or with butter or spread e.g. olive oil or sunflower oil spread, or use a savoury spread, such as marmite or peanut butter
Natural yogurt or fromage frais	on its own or as a dip or with fruit
Muffins, plain, potato or cheese scones, crumpets, pancakes, plain popcorn	on their own or with a small amount of butter or spread
Wholegrain breakfast cereals, but not cereal bars	serve with milk and fresh fruit

Where possible use a sugar-free medicine

If your child is prescribed a medicine, ensure that it is a sugar-free (SF) medicine if possible. If there is no sugar-free option give the medicine at meal times.



Practical help and information
on nutrition and development

Supported by an educational grant from Danone UK